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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,999	08/06/2002	Michel Fauconet	ATOCM 250	6478

23599 7590 08/04/2004

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EXAMINER

ZUCKER, PAUL A

ART UNIT	PAPER NUMBER
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1621

DATE MAILED: 08/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,999

Applicant(s)

FAUCONET ET AL.

Examiner

Paul A. Zucker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/21/2002</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: A section heading entitled "Brief Description of the Drawing" is required. Applicants should set forth a brief description of the figure therein. Appropriate correction is required.
2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
3. The abstract of the disclosure is objected to because there are two abstracts. It is unclear which of the Abstracts Applicants intend for publication. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 and its dependents define various claim elements by use of reference numbers and letter-number combinations. These claims therefore depend upon un-recited elements for the meaning of these symbols. It is therefore impossible to unambiguously determine the scope of Applicants' claimed invention. Claim 1 and its dependents are therefore rendered

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indefinite. Applicants should amend all claims to remove numbers referencing any scheme or figure and describe process elements entirely in words.

5. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 8 recites the limitation "said section or sections" twice in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.
6. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 15 recites the limitation "the reaction stage" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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7. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fauconet et al (WO 98/23573 06-1998). NOTE: For purposes of clarity, the following will rely upon English equivalent Fauconet et al (US 6,281,386-B1 08-2001) corresponding citations in the WO document are given in italics.

Instantly claimed is a process for the purification of acrylic acid obtained by catalytic oxidation of propylene by countercurrent contact with a heavy, high-boiling hydrophobic liquid.

Fauconet teaches (Abstract, *abstract*) a process for purifying acrylic acid obtained by catalytic oxidation of propylene by countercurrent contact with a heavy, high-boiling hydrophobic liquid having the instantly claimed ranges for boiling point, crystallization temperature and viscosity (38°C-80°C encompassed by Fauconet's range). Fauconet teaches (Figure, *Figure*) an apparatus for the process that the Examiner considers to correspond to that instantly claimed. The Examiner considers that the instantly claimed combination of elements S1 and S2 are the functional equivalent of the combination of elements S1 and C1, respectively, of Fauconet. Fauconet further teaches (Column 7, lines 63-67; *page 14, lines 19-22*) contacting the product gas with a countercurrent water wash (direct contact) in column L1 corresponding to the instant column C3. Fauconet teaches (Column 5, lines 11-62; *page 9, lines 5-22*) an identical genus of hydrophobic compounds with preferred crystallization temperatures as low as -54°C. Fauconet exemplifies (Column 7, lines 63-67; *page 14, lines 19-22*) the contacting of the reaction gas mixture with

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hydrophobic liquid introduced at 50°C presumably at atmospheric pressure. Column S1 of Fauconet is taught (Column 6, lines 43-53, *page 11, line 28 - page 12, line 2*) to serve the same function as instantly claimed column (C1) (Cf. claim 12). Fauconet teaches partial recycle of process material at various stages of the process. The use of inhibitor during absorption is either inherent since some inhibitor is introduced during recycle of process materials or obvious since it would be desirable to suppress polymerization during absorption as well as distillation.

The precise parameters of temperature and pressure of operation for the various elements are variables that one of ordinary skill in the art would routinely optimize in the course of optimizing a process and therefore cannot confer patentability to an otherwise obvious process in the absence of unexpected results.

The difference between the process taught by Fauconet and that instantly claimed is that Fauconet does not contemplate the recovery, purification and recycling of the wash water employed in the heat exchanger.

Such recycling, however, is obvious and would be motivated by the desire to both reduce the amount of waste contaminate process water which must be disposed of and reduce the amount of fresh process water that must be supplied. Since such recycling is routine there would have been a reasonable expectation for success.

Thus the instantly claimed process would have been obvious to one of ordinary skill in the art.

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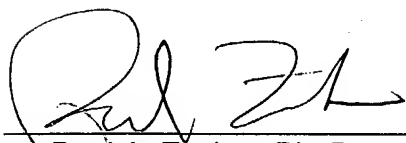
Conclusion

8. Claims 1-16 are pending. Claims 1-16 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Zucker whose telephone number is 571-272-0650. The examiner can normally be reached on Monday-Friday 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul A. Zucker, Ph. D.
Patent Examiner
Technology Center 1600